1. A method of stimulating remyelination of central nervous system axons in a mammal which comprises administering to said mammal an effective amount of a monoclonal antibody, or mixtures, monomers, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind structures and cells within the central nervous system, including oligodendrocytes.

2. The method of Claim 1 wherein said monoclonal antibody is of the IgM subtype.

3. A method of stimulating remyelination of central nervous system axons in a mammal which comprises administering to said mammal an effective amount of a human monoclonal antibody, or mixtures, monomers, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind structures and cells within the central nervous system, including oligodendrocytes.

4. The method of Claim 3 which comprises administration of a human monoclonal antibody selected from the group consisting of mAb sHIgM22 (LYM 22), ebvHIgM MSI19D10, sHIgM46 (LYM46), ebvHIgM CB2b-G8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom.

5. A method of stimulating remyelination of central nervous system axons in a mammal which comprises administering to said mammal an effective amount of mAb SHIgM22 (LYM22), mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom.

6. The method of Claim 5 wherein the light chain of said SHIgM22 (LYM22) comprises the amino acid sequence selected from SEQ ID NOS: 42 and 87.

7. The method of Claim 5 wherein the heavy chain of said SHIgM22 (LYM22) comprises the amino acid sequence selected from SEQ ID NOS: 38 and 86.

8. A method of stimulating remyelination of central nervous system axons in a mammal which comprises administering to said mammal an effective amount of mAb sHIgM46 (LYM46), mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom.

9. The method of Claim 8 wherein the light chain of said sHIgM46 (LYM46) comprises the amino acid sequence selected from SEQ ID NO: 98.

10. The method of Claim 8 wherein the heavy chain of said sHIgM46(LYM46) comprises the amino acid sequence selected from SEQ ID NO: 96.

11. A method of stimulating the proliferation of glial cells in central nervous system axons in a mammal which comprises administering to said mammal an effective amount of a monoclonal antibody, or mixtures, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind structures and cells within the central nervous system.

12. The method of Claim 11 wherein said monoclonal antibody is of the IgM subtype.

13. A method of stimulating the proliferation of glial cells in central nervous system axons in a mammal which comprises administering to said mammal an effective amount of a human monoclonal antibody, or mixtures, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind structures and cells within the central nervous system.

14. The method of Claim 13 which comprises administration of a human monoclonal antibody selected from the group consisting of mAb sHIgM22 (LYM 22), ebvHIgM MSI19D10, sHIgM46, ebvHIgM CB2b-G8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom.

15. A method of stimulating the proliferation of glial cells in central nervous system axons in a mammal which comprises administering to said mammal an effective amount of mAb sHIgM22 (LYM22), or mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom.

16. A method of stimulating the proliferation of glial cells in central nervous system axons in a mammal which comprises administering to said mammal an effective amount of mAb sHIgM46 (LYM46), or mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom.

17. The method of Claim 1 or 11 wherein the method of administration is selected from intravenous, intraperitoneal, intrathecal, subcutaneous, sublingual, intramuscular, rectal, respiratory and nasopharyngeal administration.

18. The method of Claim 1 or 11 wherein said amount of monoclonal antibody administered is between from about 0.5 mg/kg to about 400 mg/kg.

19. A method of treating or preventing a demyelinating disease of the central nervous system in a mammal which comprises administering to said mammal an effective amount of a monoclonal antibody, or mixtures, monomers, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, and to stimulate remyelination of axons of the central nervous system.

20. The method of Claim 19 wherein said monoclonal autoantibody is of the IgM subtype.

21. A method of treating or preventing a demyelinating disease of the central nervous system in a mammal which comprises administering to said mammal an effective amount of a human monoclonal autoantibody, or mixtures, monomers, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, and to stimulate remyelination of axons of the central nervous system.

22. The method of Claim 21 which comprises administration of a human monoclonal antibody selected from the group consisting of mAb sHIgM22 (LYM 22), ebvHIgM MSI19D10, sHIgM46 (LYM46), ebvHIgM CB2b-G8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom.

23. A method of treating or preventing a demyelinating disease of the central nervous system in a mammal which comprises administering to said mammal an effective amount of mAb SHIgM22 (LYM22), or mixtures thereof, monomers, active fragments thereof, or recombinant antibodies derived therefrom.

24. A method of treating or preventing a demyelinating disease of the central nervous system in a mammal which comprises administering to said mammal an effective amount of mAb SHIgM46 (LYM46), or mixtures thereof, monomers, active fragments thereof, or recombinant antibodies derived therefrom.

25. The method of Claim 19 wherein said mammal is a human being having multiple sclerosis, or a human or domestic animal with a demyelinating disease, or a disease or other injury or dysfunction of the central nervous system.

26. The method of Claim 19 wherein the method of administration is selected from intravenous, intraperitoneal, intrathecal, subcutaneous, sublingual, intramuscular, rectal, respiratory and nasopharyngeal administration.

27. The method of Claim 19 wherein said amount of monoclonal antibody administered is between from about 0.5 mg/kg to about 400 mg/kg.

28. The method of Claim 19 wherein said mammal is a mouse infected with Strain DA of Theiler's murine encephalomyelitis virus.

29. An *in vitro* method of stimulating the proliferation of glial cells from mixed cell culture comprising:

a) culturing a mixed cell culture containing glial cells under condition sufficient for cell proliferation;

b) introducing into the mixed culture an effective amount of a monoclonal autoantibody, binding partners thereto, mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, and thereby producing a monoclonal antibody-treated mixed culture;

c) maintaining the culture of step b) under conditions sufficient for proliferation of monoclonal antibody-treated cells, thereby resulting in the proliferation of glial cells in the mixed culture; and

d) harvesting the glial cells from the mixed culture.

30. An *in vitro* method of stimulating the proliferation of glial cells from mixed cell culture comprising:

a) culturing a mixed cell culture containing glial cells under condition sufficient for cell proliferation;

b) introducing into the mixed culture an effective amount of a human monoclonal autoantibody, binding partners thereto, mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, and thereby producing a monoclonal antibody-treated mixed culture;

c) maintaining the culture of step b) under conditions sufficient for proliferation of monoclonal antibody-treated cells, thereby resulting in the proliferation of glial cells in the mixed culture; and

d) harvesting the glial cells from the mixed culture.

31. The method of Claim 30 wherein the human monoclonal antibody is selected from the group consisting of mAb sHIgM22 (LYM 22), sHIgM46 (LYM46), ebvHIgM MSI19D10, Cb2BG8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom.

32. An *in vitro* method of stimulating the proliferation of glial cells from mixed cell culture comprising:

a) culturing a mixed cell culture containing glial cells under condition sufficient for cell proliferation;

b) introducing into the mixed culture an effective amount of mAb SHIgm22(LYM22) binding partners thereto, mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, and thereby producing a monoclonal antibody-treated mixed culture;

c) maintaining the culture of step b) under conditions sufficient for proliferation of monoclonal antibody-treated cells, thereby resulting in the proliferation of glial cells in the mixed culture; and

d) harvesting the glial cells from the mixed culture.

33. An *in vitro* method of stimulating the proliferation of glial cells from mixed cell culture comprising:

a) culturing a mixed cell culture containing glial cells under condition sufficient for cell proliferation;

b) introducing into the mixed culture an effective amount of mAb SHIgm46(LYM46) binding partners thereto, mixtures thereof, monomers thereof, active fragments thereof, or recombinant antibodies derived therefrom, characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, and thereby producing a monoclonal antibody-treated mixed culture;

c) maintaining the culture of step b) under conditions sufficient for proliferation of monoclonal antibody-treated cells, thereby resulting in the proliferation of glial cells in the mixed culture; and

d) harvesting the glial cells from the mixed culture.

34. The method of Claim 29 wherein the mixed culture is obtained from rat optic nerve or rat brain.

35. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy comprising:

A) culturing glial cells under conditions sufficient for cell proliferation thereby producing a glial cell culture;

B) introducing into the glial cell culture an effective amount of a monoclonal antibody capable of stimulating glial cells to exhibit a calcium (Ca^{++}) peak, mixtures thereof, monomers thereof, fragments thereof, recombinant antibodies derived therefrom, said autoantibodies characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, thereby producing a treated glial cell culture;

C) maintaining the treated glial cell culture of Step B) under conditions sufficient for proliferation of treated cells;

D) harvesting the treated cells from the culture, thereby obtaining glial cells; and

E) introducing the glial cells obtained in Step D) into the central nervous system of the mammal, thereby stimulating remyelination of central nervous system axons.

36. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy comprising:

A) culturing glial cells under conditions sufficient for cell proliferation thereby producing a glial cell culture;

B) introducing into the glial cell culture an effective amount of a human monoclonal antibody capable of stimulating glial cells to exhibit a calcium (Ca^{++}) peak, mixtures thereof, monomers thereof, fragments thereof, recombinant antibodies derived therefrom, said autoantibodies characterized by their ability to bind to structures and cells in the central nervous system, including oligodendrocytes, thereby producing a treated glial cell culture;

C) maintaining the treated glial cell culture of Step B) under conditions sufficient for proliferation of treated cells;

D) harvesting the treated cells from the culture, thereby obtaining glial cells; and

E) introducing the glial cells obtained in Step D) into the central nervous system of the mammal, thereby stimulating remyelination of central nervous system axons.

37. The method of Claim 36 wherein the human monoclonal antibody is selected from the group consisting of mAb sHIgM22 (LYM 22), sHIgM46 (LYM46), ebvHIgM MSI19D10, Cb2BG8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom.

38. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy comprising:

A) culturing glial cells under conditions sufficient for cell proliferation thereby producing a glial cell culture;

B) introducing into the glial cell culture an effective amount of mAb SHIgM22 (LYM22) thereby producing a treated glial cell culture;

C) maintaining the treated glial cell culture of Step B) under conditions sufficient for proliferation of treated cells;

D) harvesting the treated cells from the culture, thereby obtaining glial cells; and

E) introducing the glial cells obtained in Step D) into the central nervous system of the mammal, thereby stimulating remyelination of central nervous system axons.

39. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy comprising:

A) culturing glial cells under conditions sufficient for cell proliferation thereby producing a glial cell culture;

B) introducing into the glial cell culture an effective amount of mAb SHIgM46 (LYM46) thereby producing a treated glial cell culture;

C) maintaining the treated glial cell culture of Step B) under conditions sufficient for proliferation of treated cells;

D) harvesting the treated cells from the culture, thereby obtaining glial cells; and

E) introducing the glial cells obtained in Step D) into the central nervous system of the mammal, thereby stimulating remyelination of central nervous system axons.

40. A method according to any of Claims 5, 8, 15, 16, 23, 24, 32, 33, 38 or 39 wherein said monoclonal antibody has an amino acid sequence which corresponds at least in part to an amino acid sequence selected from the group consisting of FIGURE 35 (SEQ ID NO: 38, 86), FIGURE 36 (SEQ ID NO: 42, 87), FIGURE 71 (SEQ ID NO: 96), FIGURE 72 (SEQ ID NO:98) and active fragments thereof.

41. The method of Claim 38 or 39 wherein said antibody is a human antibody.

42. A pharmaceutical composition comprising a human monoclonal antibody selected from the group consisting of mAb sHIgM22 (LYM 22), sHIgM46

(LYM46), ebvHIgM MSI19D10, Cb2BG8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom and a pharmaceutically acceptable carrier, vehicle or diluent.

43. A pharmaceutical composition comprising mAb SHIgM22 (LYM22) and a pharmaceutically acceptable carrier, vehicle or diluent.

44. A pharmaceutical composition comprising mAb SHIgM46(LYM46) and a pharmaceutically acceptable carrier, vehicle or diluent.

45. A DNA sequence or degenerate variant thereof, which encodes an antibody, a peptide analog thereof, a hapten corresponding thereto, or an active fragment thereof, selected from the group consisting of:

(A) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 35 (SEQ ID NO: 38, 86);

(B) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 36 (SEQ ID NO: 42, 87);

(C) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 71 (SEQ ID NO: 96);

(D) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 72 (SEQ ID NO: 98);

(E) DNA sequences that hybridize to any of the foregoing DNA sequences under standard hybridization conditions; and

(F) DNA sequences that code on expression for an amino acid sequence encoded by any of the foregoing DNA sequences.

46. A recombinant DNA molecule comprising a DNA sequence or degenerate variant thereof, which encodes an antibody, a peptide analog thereof, a hapten

corresponding thereto, or an active fragment thereof, selected from the group consisting of:

(A) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 35 (SEQ ID NO: 38, 86);

(B) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 36 (SEQ ID NO: 42, 87);

(C) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 71 (SEQ ID NO: 96);

(D) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 72 (SEQ ID NO: 98);

(E) DNA sequences that hybridize to any of the foregoing DNA sequences under standard hybridization conditions; and

(F) DNA sequences that code on expression for an amino acid sequence encoded by any of the foregoing DNA sequences.

47. The recombinant DNA molecule of Claim 46, wherein said DNA sequence is operatively linked to an expression control sequence.

48. The recombinant DNA molecule of Claim 47, wherein said expression control sequence is selected from the group consisting of the early or late promoters of SV40 or adenovirus, the *lac* system, the *trp* system, the *TAC* system, the *TRC* system, the major operator and promoter regions of phage λ, the control regions of fd coat protein, the promoter for 3-phosphoglycerate kinase, the promoters of acid phosphatase and the promoters of the yeast α-mating factors.

49. A probe capable of screening for the antibody, peptide analog thereof, hapten corresponding thereto, or active fragment thereof, in alternate species prepared from the DNA sequence of Claim 45.

50. A unicellular host transformed with a recombinant DNA molecule comprising a DNA sequence or degenerate variant thereof, which encodes an antibody, a peptide analog thereof, a hapten corresponding thereto, or an active fragment thereof, said DNA sequence selected from the group consisting of:

(A) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 35 (SEQ ID NO: 38, 86);

(B) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 36 (SEQ ID NO: 42, 87);

(C) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 71 (SEQ ID NO: 96);

(D) the DNA sequence encoding a protein having a sequence corresponding to at least a portion of FIGURE 72 (SEQ ID NO: 98);

(E) DNA sequences that hybridize to any of the foregoing DNA sequences under standard hybridization conditions; and

(F) DNA sequences that code on expression for an amino acid sequence encoded by any of the foregoing DNA sequences;

wherein said DNA sequence is operatively linked to an expression control sequence.

51. The unicellular host of Claim 50, wherein the unicellular host is selected from the group consisting of *E. coli*, *Pseudomonas*, *Bacillus*, *Streptomyces*, yeasts, CHO, R1.1, B-W, L-M, COS 1, COS 7, BSC1, BSC40, and BMT10 cells, plant cells, insect cells, and human cells in tissue culture.

52. An assay method for screening drugs and other agents for ability to modulate the production or mimic the activities of monoclonal antibody sHIgM22, sHIgM46 or combinations thereof, said method comprising:

A. culturing an observable cellular test colony inoculated with a drug or agent;

B. harvesting a supernatant from said cellular test colony; and

C. examining said supernatant for the presence of said monoclonal antibody wherein an increase or a decrease in a level of said monoclonal antibody indicates the ability of a drug to modulate the activity of said monoclonal antibody, said monoclonal antibody having one or more of the following characteristics:

i) inducing remyelination;

ii) binding to neural tissue;

iii) promoting Ca^{++} signaling with oligodendrocytes; and

iv) promoting cellular proliferation of glial cells.

53. A test kit for demonstrating the presence of monoclonal antibody sHIgM22, sHIgM46 or combinations thereof, said kit comprising:

A. a predetermined amount of said monoclonal antibody;

B. a predetermined amount of a specific binding partner of said monoclonal antibody;

C. other reagents; and

D. directions for use of said kit;

wherein either said monoclonal antibody or said specific binding partner are detectably labeled.

54. A method of preventing and/or treating a demyelinating disease in mammals including humans comprising administering to a mammal a therapeutically effective amount of a monoclonal autoantibody, active fragments thereof, agonists thereof, mimics thereof, recombinant antibodies derived therefrom, and combinations thereof, said monoclonal autoantibody having one or more of the following characteristics:

a) inducing remyelination;

b) binding to neural tissue;

b) promoting Ca^{++} signaling with oligodendrocytes; and

c) promoting cellular proliferation of glial cells.

55. A method of preventing and/or treating a demyelinating disease in mammals including humans comprising administering to a mammal a therapeutically effective amount of a human monoclonal autoantibody, active fragments thereof, agonists thereof, mimics thereof, recombinant antibodies derived therefrom, and combinations thereof, said monoclonal autoantibody having one or more of the following characteristics:

a) inducing remyelination;

b) binding to neural tissue;

b) promoting Ca^{++} signaling with oligodendrocytes; and

c) promoting cellular proliferation of glial cells.

56. The method of Claim 55 wherein said human monoclonal autoantibody is selected from sHIgM22 (LYM 22), sHIgM46 (LYM46), ebvHIgM MSI19D10, CB2bG8, MSI10E10, mixtures thereof, monomers thereof, active fragments thereof, binding partners thereto, and recombinant antibodies derived therefrom.

57. A method of preventing and/or treating a demyelinating disease in mammals including humans, comprising administering to a mammal a therapeutically effective amount of a monoclonal autoantibody selected from the group consisting of sHIgM22, sHIgM46, active fragments thereof, agonists thereof, mimics thereof, recombinant antibodies derived therefrom, and combinations thereof.

58. The method of Claim 57 wherein said autoantibody has an amino acid sequence which corresponds at least in part to an amino acid sequence selected from the group consisting of FIGURE 35 (SEQ ID NO: 38, 86), FIGURE 36 (SEQ ID NO: 42, 87), FIGURE 71 (SEQ ID NO: 96), FIGURE 72 (SEQ ID NO: 98) and active fragments thereof.

59. The method of Claim 54 wherein said demyelinating disease is selected from the group of multiple sclerosis and viral diseases of the central nervous system

60. A method for treating spinal cord injury comprising administering to a mammal a therapeutically effective amount of a human monoclonal autoantibody selected from the group consisting of sHIgM22 (LYM 22), sHIgM46 (LYM46), ebvHIgM MSI19D10, CB2bG8, MSI10E10, active fragments thereof, agonists thereof, mimics thereof, recombinant antibodies derived therefrom, and combinations thereof.

61. A method for treating spinal cord injury comprising administering to a mammal a therapeutically effective amount of a monoclonal autoantibody selected from the group consisting of sHIgM22, sHIgM46, active fragments thereof, agonists thereof, mimics thereof, recombinant antibodies derived therefrom, and combinations thereof.

62. An antibody produced by injecting a substantially immunocompetent host with an antibody-producing effective amount of an antibody peptide, and harvesting said antibody, said antibody peptide comprising an amino acid sequence selected from the group consisting of FIGURE 35 (SEQ ID NO: 38, 86), FIGURE 36 (SEQ ID NO: 42, 87), FIGURE 71 (SEQ ID NO: 96), FIGURE 72 (SEQ ID NO: 98) and active fragments thereof.

63. The antibody of Claim 62 which is monoclonal.

64. The antibody of Claim 62 which is polyclonal.

65. The antibody of Claim 62 which is chimeric (bi-specific).

66. A recombinant virus transformed with the DNA molecule, or a derivative or fragment thereof, in accordance with Claim 46.

67. A vector which comprises the DNA molecule of Claim 47.

68. The vector of Claim 67, wherein the expression control sequence comprises a bacterial, yeast, insect or mammalian promoter.

69. The vector of Claim 68, wherein the vector is a plasmid, cosmid, yeast artificial chromosome (YAC), bacteriophage or eukaryotic viral DNA.

70. A host vector system for the production of a polypeptide which comprises the vector of Claim 67 in a suitable host cell.

71. The host vector system of Claim 70, wherein the suitable host cell comprises a prokaryotic or eukaryotic cell.

72. A method of obtaining a polypeptide in purified form which comprises:

(a) introducing the vector of Claim 67 into a suitable host cell;

(b) culturing the resulting host cell so as to produce the polypeptide;

(c) recovering the polypeptide produced in step (b); and

(d) purifying the polypeptide so recovered in step (c).

73. A pharmaceutical composition comprising an amount of the polypeptide of Claim 72 and a pharmaceutically acceptable carrier or diluent.

74. A vaccine comprising the vector of Claim 67 and a pharmaceutically acceptable adjuvant or carrier.

75. A method of inducing an immune response in a subject which has been exposed to or infected with a bacterium, a virus or like pathogen that causes demyelination or other neurodegenerative condition comprising administering to the subject an amount of the pharmaceutical composition of Claim 42, thereby inducing an immune response.

76. A method for imaging one or more portion of the central nervous system in a mammal comprising administering to said mammal an effective amount of a monoclonal autoantibody selected from the group of sHIgM22, sHIgM46, mixtures, monomers, active fragments thereof, combinations thereof, or recombinant antibodies derived therefrom, wherein said antibody is labeled with a detectable label or administered with an imaging agent, and wherein said antibody amount is sufficient to image one or more portion of the central nervous system.

77. A method for diagnosing or monitoring demyelination and/or remyelination of the central nervous system in a mammal comprising administering to said mammal an effective amount of a monoclonal autoantibody selected from the group of sHIgM22, sHIgM46, mixtures, monomers, active fragments thereof, combinations thereof or recombinant antibodies derived therefrom, wherein said antibody is labeled with a detectable label or administered with an imaging agent, and wherein said antibody amount is sufficient to image central nervous system regions of demyelination or remyelination.

78. A method of stimulating remyelination of central nervous system axons in a mammal in need of such therapy which comprises administering to said mammal an effective amount of a polyclonal IgM immunoglobulin for stimulating remyelination of central nervous system axons.

79. The method of Claim 78 wherein said polyclonal IgM immunoglobulin is human polyclonal IgM immunoglobulin.

80. The method of Claim 78 wherein the method of administration is selected from intravenous, intramuscular, oral intraperitoneal, intrathecal, subcutaneous, sublingual, rectal, respiratory and nasopharyngeal administration

81. The method of Claim 78 wherein said amount of IgM immunoglobulin administered is between from about 0.5 mg/kg to about 2g/kg.

82. A method of stimulating the proliferation of glial cells in central nervous system axons in a mammal in need of such therapy which comprises administering to said mammal an effective amount of a polyclonal IgM immunoglobulin for stimulating proliferation of glial cells in central nervous system axons.

83. The method of claim 82 wherein said polyclonal IgM immunoglobulin is human polyclonal IgM immunoglobulin.

84. The method of Claim 82 wherein the method of administration is selected from intravenous, intramuscular, oral intraperitoneal, intrathecal, subcutaneous, sublingual, rectal, respiratory and nasopharyngeal administration

85. The method of Claim 82 wherein said amount of IgM immunoglobulin administered is between from about 0.5 mg/kg to about 2 g/kg.

86. A method of treating a demyelinating disease of the central nervous system in a mammal in need of such therapy which comprises administering to said mammal an effective amount of a polyclonal IgM immunoglobulin sufficient to provide a clinically observable improvement in the demyelinating disease.

87. The method of Claim 86 wherein said mammal is a human being having multiple sclerosis, or a human with a viral demyelinating disease and wherein said polyclonal IgM immunoglobulin solution is human polyclonal IgM immunoglobulin.

88. The method of Claim 86 wherein the method of administration is selected from intravenous, intramuscular, oral intraperitoneal, intrathecal, subcutaneous, sublingual, rectal, respiratory and nasopharyngeal administration

89. The method of Claim 86 wherein said amount of IgM immunoglobulin administered is between from about 0.5 mg/kg to about 2 g/kg.

90. An *in vitro* method of stimulating the proliferation of glial cells from mixed cell culture comprising:

a) culturing a mixed cell culture containing glial cells under condition sufficient for cell proliferation;

b) introducing into the mixed culture an effective amount of a polyclonal IgM immunoglobulin solution, thereby producing a polyclonal IgM antibody-treated mixed culture;

c) maintaining the culture of step b) under conditions sufficient for proliferation of polyclonal antibody-treated cells, thereby resulting in the proliferation of glial cells in the mixed culture; and

d) harvesting the glial cells from the mixed culture.